

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~striketrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND claims 1, 7 and 22-26 and ADD new claim 28 in accordance with the following:

1. (CURRENTLY AMENDED) A method for automatically updating a shared central subscriber directory used over a network by different autonomous telephony messaging systems to route subscriber messages, comprising:

generating an update request in response to an event that changes subscriber information in a subscriber database of a messaging system based on a determination that said event is one of predetermined events requiring an update across the telephony messaging systems; and

when the update request is generated, automatically updating corresponding subscriber information in the shared central subscriber directory based on the update request, where the updated subscriber information becomes accessible by the different autonomous telephony messaging systems to route subscriber messages.

2. (PREVIOUSLY PRESENTED) A method as recited in claim 1, further comprising storing the update event at an intermediate server while maintaining synchronicity between the update event and the messaging system.

3. (ORIGINAL) A method as recited in claim 1, wherein said generating occurs only when information changed in the message box has corresponding information in the shared central subscriber directory.

4. (ORIGINAL) A method as recited in claim 3, further comprising sending the update request from the intermediate server to a proxy client that in turn sends the update request to the shared central subscriber directory.

5. (ORIGINAL) A method as recited in claim 1, wherein said generating and updating is performed by a plurality of messaging systems that also access the shared central subscriber directory.

6. (ORIGINAL) A method as recited in claim 1, wherein said generating is responsive to a change to a message box initiated by a subscriber telephone call.

7. (CURRENTLY AMENDED) A method for automatically synchronizing a shared central subscriber directory server used over a network by different autonomous telephony voice messaging systems, comprising:

generating an update request for updating the shared subscriber directory server when one of subscriber actions and administrator actions update subscriber information in a database of one of the voice messaging systems; said generating being based on a determination that one of the subscriber actions and the administrator actions matches predetermined events requiring an update across the voice messaging systems;

when the update request is generated, appending the update request to a queue managed by an update server and in a same order as one of corresponding subscriber actions and corresponding administrator actions occur;

reading the update requests from the queue on a first-in first-out basis;

sending the update requests to the shared subscriber directory server; and

updating the shared subscriber directory server in real-time based on the update request whereby the updated subscriber information becomes accessible by the different autonomous telephony voice messaging systems to route subscriber messages.

8. (ORIGINAL) A method as recited in claim 7, further comprising refreshing subscriber information in the update requests, after said reading and before said sending, in accordance with current corresponding subscriber information in the voice messaging system, when the update requests are one of expired and in a queue not primarily associated with the voice messaging system having the subscriber information.

9. (ORIGINAL) A method as recited in claim 7, wherein said appending, reading, sending and refreshing are performed by an intermediate server managing the queue, and said generating occurs at one of an application process, an administrative utility, and a bulk data

upload utility.

10. (ORIGINAL) The method as recited in claim 9, wherein the bulk data upload utility generates update requests for one of ranges of message boxes in the voice messaging system, all message boxes in the voice messaging system, and ranges of message boxes in the voice messaging system.

11. (ORIGINAL) A method as recited in claim 7, wherein the shared subscriber directory is accessed using one of Lightweight Directory Access Protocol X.500 protocol.

12. (ORIGINAL) A method as recited in claim 7, wherein the subscriber directory resides in a remote, foreign addressing domain and is shared by messaging systems from different vendors.

13. (ORIGINAL) A method as recited in claim 7, further comprising appending the update request to a queue of a secondary update server when a primary update server is unavailable.

14. (ORIGINAL) A method as recited in claim 7, further comprising reading from a second update server the update requests in the queue responsive to a failure impairing the update server.

15. (ORIGINAL) A method as recited in claim 7, wherein the subscriber action comprises a telephone call that updates the message box of the subscriber.

16. (ORIGINAL) A method as recited in claim 7, wherein one of subscriber actions and administrator actions comprises one of creating a message box, deleting a message box, modifying a message box, suspending a message box, reinstating a message box, reinitializing a message box, and migrating a message box from a first voice messaging system to a second voice messaging system

17. (ORIGINAL) A method as recited in claim 7, wherein said generating is triggered in an application corresponding to one of the subscriber action and the administrator action.

18. (ORIGINAL) A method as recited in claim 17, wherein the application corresponding to one of the subscriber action and the administrator action resumes processing immediately after said generating.

19. (ORIGINAL) A method as recited in claim 7, wherein said generating is responsive to a change to a message box initiated by a subscriber telephone call.

20. (ORIGINAL) A method as recited in claim 7, further comprising determining whether name announcements are attributes of subscriber information that are updated on the shared directory server.

21. (ORIGINAL) A method as recited in claim 20, further comprising including name announcement data with the update requests if said determining indicates that name announcement data is updated on the shared directory server, and transcoding the name announcement before sending it to the shared subscriber directory server.

22. (CURRENTLY AMENDED) A method for automatically synchronizing a shared subscriber directory server with a voice messaging system, comprising:

generating, responsive to a subscriber telephone call, an update request for updating the shared subscriber directory server when one of subscriber actions and administrator actions update subscriber information in the voice messaging system, said generating being based on a determination that one of the subscriber actions and the administrator actions matches predetermined events requiring an update across the voice messaging system;

appending, the update request to a queue managed by an update server and in a same order as one of corresponding subscriber actions and corresponding administrator actions occur;

reading, with the update server, the update requests from the queue on a first-in first-out basis;

refreshing, with the update server, subscriber information in the update requests, after said reading and before said sending, in accordance with current corresponding subscriber information in the voice messaging system, when the update requests are one of expired and in a queue not primarily associated with the voice messaging system having the subscriber

information;

sending the update requests from the update server to the shared subscriber directory server using Lightweight Directory Access Protocol;

updating the shared subscriber directory server in real-time based on the update request.

23. (CURRENTLY AMENDED) A computer readable storage controlling a computer via a data structure for automatically updating a subscriber directory used to route subscriber messages across different autonomous telephony voice messaging systems and comprising a telephone number field, a local access and transport area identifier field, a network routing address field, and a presentation address field, where said updating is based on a determination that at least one of predetermined events requiring an update across different autonomous telephony voice messaging systems has occurred.

24. (CURRENTLY AMENDED) An apparatus for automatically updating a subscriber directory used over a network by different autonomous telephony voice messaging systems to route subscriber messages, comprising:

a control unit generating an update request in response to an event that changes subscriber information in a subscriber database of one of the voice messaging systems, the update request being generated based on a determination that the event is one of predetermined events requiring an update across the telephony voice messaging systems; and

a database comprising the subscriber directory, where the database is updated by said control unit based on the update request when the update request is generated, whereby the changed subscriber information becomes accessible to each of the different autonomous telephony voice messaging systems to route subscriber messages.

25. (CURRENTLY AMENDED) An apparatus for automatically synchronizing a shared subscriber directory server used over a network by different autonomous telephony voice messaging systems, comprising:

a program generating an update request for updating the shared subscriber directory server when one of subscriber actions and administrator actions update subscriber information in the voice messaging system, where the update request is sent when ~~it is generated~~ and is based on a determination that one of the subscriber actions and the administrator actions matches predetermined events requiring an update across the telephony voice messaging

systems;

an update server receiving the update request and appending the update request to a queue managed by said update server in a same order as one of corresponding subscriber actions and corresponding administrator actions occur, said update server reading the update requests from the queue on a first-in first-out basis and sending the update requests to the shared subscriber directory server; and

a shared subscriber directory server updating a subscriber database in real-time based on the update request, whereby the updated subscriber information becomes accessible to each of the different autonomous telephony voice messaging systems to route subscriber messages.

26. (CURRENTLY AMENDED) A computer readable storage controlling a computer via generating an update request responsive to a subscriber information change event in any of plural subscriber information databases of respective autonomous voice messaging systems; in response to a determination that said event is one of predetermined events requiring an update across the voice messaging systems, and

updating a shared centralized subscriber directory used across the autonomous voice messaging systems to route subscriber messages among the plural message systems.

27. (PREVIOUSLY PRESENTED) A method of updating a shared subscriber directory used by telephony messaging systems to route subscriber messages, comprising:

automatically updating subscriber information of corresponding subscriber databases of the telephony messaging systems and the shared subscriber directory in response to a predetermined subscriber information change event at any one of the telephony messaging systems; and

synchronizing corresponding routing directories of each of the telephony messaging systems in accordance with predetermined subscriber information change event, where the telephony messages systems are maintained by multiple vendors.

28. (NEW) A method of updating a shared directory used by telephony messaging systems, comprising:

receiving a request for changing subscriber information from a corresponding subscriber, said subscriber information being stored in a shared directory used by a first of the messaging systems;

updating the subscriber information across each of the telephony messaging systems;
and

routing a message to a second of the telephony systems using the updated subscriber information.